

Module 6 - Steady State Circuits

ME3023 - Measurements in Mechanical Systems

Mechanical Engineering

Tennessee Technological University

Topic 2 - Circuit Applications

Topic 2 - Circuit Applications

- Circuits in Mechanical Engineering
- Voltage Divider - LED
- Wheatstone Bridge - Strain
- Switches - User Input

Circuits in Mechanical Engineering

You are learning to become a mechanical engineer so why are learning and electronics?

- System design is integrated!
- Look around you, can you find anything that was developed or designed without circuits?
- Many devices or designs combine mechanical and electrical systems. This is known as Mechatronics!

Circuits in Mechanical Engineering

If you are interested in this area you are in a great place to learn. TnTech Mechanical Engineering offers a concentration in Mechatronics Engineering. In this degree you will study both mechanical engineering and electrical engineering topic to give you the foundation to design truly integrated systems! Ask me or Dr. Canfield if you have any questions about this.

Voltage Divider - LED

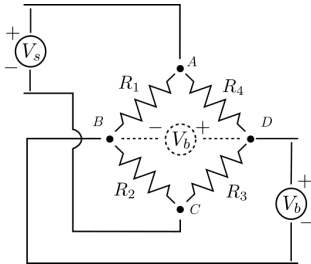
LED - Light Emitting Diode

These are used more and more everyday and traditional *incandecant* lights are used rarely. Are LEDs better in every way?
Can you think of any tradeoffs?

Voltage Divider - LED

Wheatstone Bridge - Strain

How does the bridge circuit work as a transducer?



Use KVL and the voltage divider rule find the relationship between the two voltages.

Wheatstone Bridge - Strain

Switches - User Input

Switches can be used to add a simple user interface to a circuit. There many different types of switches for different purposes. This is not an exhaustive list.

Switches - User Input

Here are a few examples.